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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/083,496	02/27/2002	Yoichi Iihoshi	381NP/50962	8235
23911	7590	10/20/2003	EXAMINER	
CROWELL & MORING LLP INTELLECTUAL PROPERTY GROUP P.O. BOX 14300 WASHINGTON, DC 20044-4300			TRAN, BINH Q	
			ART UNIT	PAPER NUMBER
			3748	

DATE MAILED: 10/20/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/083,496

Applicant(s)

IIHOSHI ET AL.

Examiner

BINH Q. TRAN

Art Unit

3748

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7-10 and 16 is/are rejected.
- 7) ☒ Claim(s) 4-6, 11-15 and 17-20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

This office action is in response to the amendment filed July 31, 2003.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 1-3, 7-10, and 16 are rejected under 35 U.S.C. 102 (e) as being anticipated by Yasui et al. (Yasui) (Patent Number 6,401,451 B1).

Regarding claim 1, Yasui discloses an internal combustion engine diagnosis apparatus comprising a cleanup catalyst (e.g. 40, 42) arranged in an exhaust pipe of an internal combustion engine (10); and an HC adsorption catalyst (74) arranged in parallel to and downstream of said cleanup catalyst, during high temperature period said HC adsorption catalyst desorbing and cleaning up HC desorbed during low temperature period, wherein degradation of said HC adsorption catalyst is diagnosed based on temperature of said HC adsorption catalyst while HC is being desorbed from said HC adsorption catalyst (during HC desorbing period) (e.g. See Figures 11-35; Steps S10-S48; col. 10, lines 7-67; col. 11, lines 1-37; col. 15, lines 5-32).

Art Unit: 3748

Regarding claims 2 and 7-8, Yasui discloses an internal combustion engine diagnosis apparatus comprising a cleanup catalyst (e.g. 40, 42) arranged in an exhaust pipe of an internal combustion engine (10); and an HC adsorption catalyst (74) arranged in parallel to and downstream of said cleanup catalyst (e.g. 40, 42), during high temperature period said HC adsorption catalyst desorbing and cleaning up HC desorbed during low temperature period, wherein degradation of said HC adsorption catalyst is diagnosed based on a gradient of temperature of said HC adsorption catalyst (74) during a period when temperature of said HC adsorption catalyst is within a range of 50 °C to 250 °C (e.g. See Figures 11-35; Steps 10-13; Steps 100-136; col. 6, lines 63-67; col. 13, lines 4-21; col. 19, lines 1-23).

Regarding claims 3, 9, and 16, Yasui further discloses that the internal combustion engine comprises a temperature detector (400) for detecting temperature of said HC adsorption catalyst, and degradation of said HC adsorption catalyst is diagnosed based on a detected value of said temperature detector (See Fig. 38; col. 22, lines 25-67; col. 23, lines 1-67; col. 24, lines 1-17).

Regarding claim 10, Yasui further discloses that the desorbing time period exceeds a preset time, judgment of degradation of said HC adsorption catalyst is prohibited (e.g. See Figures 26-35; col. 15, lines 33-67; col. 16, lines 1-67).

Allowable Subject Matter

Claims 4-6, 11-15, and 17-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 3748

Since allowable subject matter has been indicated, applicant is encouraged to submit formal drawings in response to this Office action. The early submission of formal drawings will permit the Office to review the drawings for acceptability and to resolve any informalities remaining therein before the application is passed to issue. This will avoid possible delays in the issue process.

Response to Arguments

Applicant's arguments filed July 31, 2003 have been fully considered but they are not completely persuasive. ***Claims 1-20 are pending.***

Applicant's cooperation in correcting the informalities in the drawing appreciated. Applicant's cooperation in explaining the claims subject matter more specific to overcome the claims rejection is also appreciated.

Applicants have argued that Yasui does not teach or suggest Applicants's claimed invention. More specifically, Applicants assert that the reference to Yasui fails to disclose "*a diagnosis for detecting degradation of the HC absorbing catalyst, which is performed using only the temperature sensor without use of the HC sensor*". In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "*a diagnosis for detecting degradation of the HC absorbing catalyst, which is performed using only the temperature sensor without use of the HC sensor*".) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Art Unit: 3748

In addition, in Figures 9-13; Steps S10-S48; column 6, lines 64-67, and column 7, lines 1-3, Yasui discloses that " The adsorbent made from zeolite adsorbs HC at a low temperature, less than 100 °C and desorbs the adsorbed HC at a higher temperature, ranging from 100 °C to 250 °C. These temperatures are different for different kinds of HC (number of carbons) and increase with increasing number of carbons. Moreover, these temperatures also vary depending on the kind of zeolites. " Moreover, in column 23, lines 52-67, and column 24, lines 1-17, Yasui further discloses " In the system, the HC adsorption rate determining means determines the HC adsorption rate based on the estimated adsorbed HC amount (hcm.hat) and a parameter relating to a temperature of the adsorbent. The parameter is at least one from among the temperature of the adsorbent (tmp.trs), a coolant temperature of the engine (TW), a temperature of the catalyst (tmp.cat) and a temperature at a location downstream of the catalyst (tmp.acat). The parameter is an estimated parameter or a measured parameter obtained by a temperature sensor (200, 300, 400). ... In the system, the adsorbent degradation discriminating means includes: degradation discrimination period determining means (ECU 114, S16) for determining a period for degradation discrimination (tm.trs.ch1, 2) based at least on a parameter relating to a temperature of the adsorbent, more precisely, based at least on the parameter and the estimated adsorbed HC amount (hcm.hat); and in-period determining means (ECU 114, S36, S38) for determining whether it is within the period; and discriminates whether the adsorbent has degraded when it is within the period. In the system, the threshold value determining means determines the threshold value based at least on a parameter relating to a temperature of the adsorbent (ECU 114, S34, S500 to S508). " In the above paragraphs, Yasui has clearly disclosed the steps of degradation of said HC adsorption catalyst is

Art Unit: 3748

diagnosed based on temperature of said HC adsorption catalyst while HC is being desorbed from said HC adsorption catalyst.

Applicants have also argued that Yasui fails to disclose the steps of *"if the desorbing time period exceeds a preset time, judgment of degradation of the HC adsorption catalyst is prohibited."* The examiner respectfully disagrees, in column 15, lines 5-32, the patent to Yasui discloses *"Returning to the explanation of FIG. 11, the program proceeds to S16 in which the times (named "tm.trs.ch1, 2") defining a degradation discrimination period are determined. As illustrated in FIG. 9, tm.trs.ch1 indicates the time at which the degradation discrimination should be initiated and tm.trs.ch2 indicates the time at which the degradation discrimination should be terminated. The determination of tm.trs.ch1, 2 is done by retrieving mapped data (whose characteristics are shown in FIG. 26) using an estimated adsorbed HC amount (named "hcm.hat") and one from among the parameters relating to the adsorbent temperature. As the adsorbent temperature parameter, the adsorbent temperature tmp.trs should preferably be used. However, it is alternatively possible to use another value such as the engine coolant temperature TW, the catalyst temperature tmp.cat, the aft-catalyst exhaust gas temperature tmp.acat, etc. As will be explained later, the estimated adsorbed HC amount hcm.hat is decreased in response to the desorption (purging) of the adsorbed HC and set to zero when the desorption (purging) has been completed."* It is clearly the above steps are read on the above rejected claims.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the

Art Unit: 3748


mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Binh Tran whose telephone number is (703) 305-0245. The examiner can normally be reached on Monday-Friday from 8:30 a.m. to 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion, can be reach on (703) 308-2623. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0861.



BT
October 19, 2003

Binh Tran
Patent Examiner
Art Unit 3748